

TITLE 21 - DEPARTMENT OF AGRICULTURE, BUREAU OF DAIRIES
AND FOODS

Chapter 1 - GRADED EGG REGULATIONS

001 General. This rule is designed to implement and carry out the intent and purposes of the Nebraska Graded Egg Act.

002 Definitions. Terms in this rule shall have the same meanings set forth for such terms in the act. In addition, as used in this rule, unless the context otherwise requires:

002.01 Act shall mean the Nebraska Graded Egg Act;

002.02 At destination shall mean grading performed where shell eggs are retailed or consumed;

002.03 At origin shall mean grading performed at a place other than where shell eggs are retailed or consumed.

003 Standards For Quality of Shell Eggs.

003.01 Application. The standards for quality of individual shell eggs contained in this section are applicable only to eggs that are the product of the domesticated chicken hen and are in the shell.

003.02 Interior Egg Quality. Interior egg quality specifications for these standards are based on the apparent condition of the interior contents of the egg as it is twirled before the candling light. Any type or make of candling light may be used that will enable the particular grader to make consistently accurate determination of the interior quality of shell eggs. It is desirable to break out an occasional egg and by determining the Haugh unit value of the broken-out egg, compare the broken-out and the candled appearance, thereby aiding in correlating candled and broken-out appearance.

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003.03 AA Quality. The shell must be clean, unbroken, and practically normal. The air cell must not exceed 1/8 inch in depth, may show unlimited movement, and may be free or bubbly. The white must be clear and firm so that the yolk is only slightly defined when the egg is twirled before the candling light. The yolk must be practically free from apparent defects.

003.04 A Quality. The shell must be clean, unbroken, and practically normal. The air cell must not exceed 3/16 inch in depth, may show unlimited movement, and may be free or bubbly. The white must be clear and at least reasonably firm so that the yolk outline is only fairly well defined when the egg is twirled before the candling light. The yolk must be practically free from apparent defects.

003.05 B Quality. The shell must be unbroken, may be abnormal, and may have slightly stained areas. Moderately stained areas are permitted if they do not cover more than 1/32 of the shell surface if localized, or 1/16 of the shell surface if scattered. Eggs having shells with prominent stains or adhering dirt are not permitted. The air cell may be over 3/16 inch in depth, may show unlimited movement, and may be free or bubbly. The white may be weak and watery so that the yolk outline is plainly visible when the egg is twirled before the candling light. The yolk may appear dark, enlarged, and flattened, and may show clearly visible germ development but no blood due to such development. It may show other serious defects that do not render the egg inedible. Small blood spots or meat spots (aggregating not more than 1/8 inch in diameter) may be present.

003.06 Dirty. An individual egg that has an unbroken shell with adhering dirt or foreign material, prominent stains, or moderate stains covering more than 1/32 of the shell surface if localized, or 1/16 of the shell surface if scattered.

003.07 Check. An individual egg that has a broken shell or crack in the shell but with its shell membranes intact and its contents do not leak. A "check" is considered to be lower in quality than a "dirty".

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003.08 Summary of Standards for Quality.

Specifications for Each Quality Factor

Quality Factor	AA Quality	A Quality	B Quality
Shell	Clean Unbroken Practically normal	Clean Unbroken Practically normal	Clean to slightly stained.* Unbroken, Abnormal
Air Cell	1/8 inch or less in depth. Unlimited movement and free or bubbly.	3/16 inch or less in depth. Unlimited movement and free or bubbly.	Over 3/16 inch in depth. Unlimited movement and free or bubbly.
White	Clear Firm	Clear Reasonably firm	Weak and watery. Small blood and meat spots.
Yolk	Outline slightly defined. Practically free of defects.	Outline fairly well defined. Practically free from defects.	Outline plainly visible. Enlarged and flattened. Clearly visible germ development but no blood. Other serious defects.

* Moderately stained areas permitted (1/32 of surface if localized, or 1/16 if scattered).

** If they are small (aggregating not more than 1/8 inch in diameter).

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For eggs with dirty or broken shells, the standards for quality provide two additional qualities. These are:

Dirty	Check
Unbroken. Adhering dirt or foreign material, prominent stains, moderate stained areas in excess of B quality.	Broken or cracked shell but membranes intact, not leaking.***

*** Leaker has broken or cracked shell and membranes, and contents leaking or free to leak.

004 Terms Descriptive of the Shell.

004.01 Clean. A shell that is free from foreign material and from stains or discolorations that are readily visible. An egg may be considered clean if it has only very small specks, stains, or cage marks, if such specks, stains, or cage marks are not of sufficient number or intensity to detract from the generally clean appearance of the egg. Eggs that show traces of processing oil on the shell are considered clean unless otherwise soiled.

004.02 Dirty. A shell that is unbroken and that has dirt or foreign material adhering to its surface, which has prominent stains, or moderate stains covering more than 1/32 of the shell surface if localized, or 1/16 of the shell surface if scattered.

004.03 Practically normal (AA or A quality). A shell that approximates the usual shape and that is sound and is free from thin spots. Ridges and rough areas that do not materially affect the shape and strength of the shell are permitted.

004.04 Abnormal (B quality). A shell that may be somewhat unusual or decidedly misshapen or faulty in soundness or strength or that may show pronounced ridges or thin spots.

005 Terms Descriptive of the Air Cell.

005.01 Depth of air cell (air space between shell membranes, normally in the large end of the egg). The

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depth of the air cell is the distance from its top to its bottom when the egg is held air cell upward.

005.02 Free air cell. An air cell that moves freely toward the uppermost point in the egg as the egg is rotated slowly.

005.03 Bubbly air cell. A ruptured air cell resulting in one or more small separate air bubbles usually floating beneath the main air cell.

006 Terms Descriptive of the White.

006.01 Clear. A white that is free from discolorations or from any foreign bodies floating in it. (Prominent chalazas should not be confused with foreign bodies such as spots or blood clots).

006.02 Firm (AA quality). A white that is sufficiently thick or viscous to prevent the yolk outline from being more than slightly defined or indistinctly indicated when the egg is twirled. With respect to a broken-out egg, a firm white has a Haugh unit value of 72 or higher when measured at a temperature between 45° and 60°F.

006.03 Reasonably firm (A quality). A white that is somewhat less thick or viscous than a firm white. A reasonably firm white permits the yolk to approach the shell more closely which results in a fairly well defined yolk outline when the egg is twirled. With respect to a broken-out egg, a reasonably firm white has a Haugh unit value of 60 to 72 when measured at a temperature between 45° and 60°F.

006.04 Weak and watery (B quality). A white that is weak, thin, and generally lacking in viscosity. A weak and watery white permits the yolk to approach the shell closely, thus causing the yolk outline to appear plainly visible and dark when the egg is twirled. With respect to a broken-out egg, a weak and watery white has a Haugh unit value lower than 60 when measured at a temperature between 45° and 60°F.

006.05 Blood spots or meat spots. Small blood spots or meat spots (aggregating not more than 1/8 inch in diameter) may be classified as B quality. If larger, or showing diffusion of blood into the white surrounding a

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blood spot, the egg shall be classified as Loss. Blood spots shall not be due to germ development. They may be on the yolk or in the white. Meat spots may be blood spots which have lost their characteristic red color or tissue from the reproductive organs.

006.06 Bloody White. An egg which has blood diffused through the white. Eggs with bloody whites are classed as loss. Eggs with blood spots which show a slight diffusion into the white around the localized spot are not to be classed as bloody whites.

007 Terms Descriptive of the Yolk.

007.01 Outline slightly defined (AA quality). A yolk outline that is indistinctly indicated and appears to blend into the surrounding white as the egg is twirled.

007.02 Outline fairly well defined (A quality). A yolk outline that is discernible but not clearly outlined as the egg is twirled.

007.03 Outline plainly visible (B quality). A yolk outline that is clearly visible as a dark shadow when the egg is twirled.

007.04 Enlarged and flattened (B quality). A yolk in which the yolk membranes and tissues have weakened and/or moisture has been absorbed from the white to such an extent that the yolk appears definitely enlarged and flat.

007.05 Practically free from defects (AA or A quality). A yolk that shows no germ development but may show other very slight defects on its surface.

007.06 Serious defects (B quality). A yolk that shows well developed spots or areas and other serious defects, such as olive yolks, which do not render the egg inedible.

007.07 Clearly visible germ development (B quality). A development of the germ spot on the yolk of a fertile egg that has progressed to a point where it is plainly visible as a definite circular area or spot with no blood in evidence.

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007.08 Blood due to germ development. Blood caused by development of the germ in a fertile egg to the point where it is visible as definite lines or as a blood ring. Such an egg is classified as inedible.

008 General Terms.

008.01 Loss. An egg that is inedible, smashed, or broken so that contents are leaking, cooked, frozen, contaminated, or containing bloody whites, large blood spots, or other foreign material.

008.02 Inedible eggs. Eggs of the following descriptions are classed as inedible: black rots, yellow rots, white rots, mixed rots, (addled eggs), sour eggs, eggs with green whites, eggs with stuck yolks, moldy eggs, musty eggs, eggs showing blood rings, eggs containing embryo chicks (at or beyond the blood ring state), and any eggs that are adulterated as such term is defined pursuant to the Federal Food, Drug, and Cosmetic Act.

008.03 Leaker. An individual egg that has a crack or break in the shell and shell membranes to the extent that the egg contents are exuding or free to exude through the shell.

009 Grades and Weight Classes For Shell Eggs-General.

009.01 These grades are applicable to edible shell eggs in "lot" quantities rather than on an "individual" egg basis. A lot may contain any quantity of two or more eggs. Reference in these standards to the term "case" means 30-dozen egg cases as used in commercial practices in the United States. The size of the sample used to determine grade shall be on the basis of the requirements of CFR §56.4 or as determined by the National Supervisor, USDA.

009.02. Terms used in this section that are defined in the United States standards for quality of individual shell eggs, CFR §56.200 et seq., have the same meaning in this section as in those standards.

009.03. Aggregate tolerances are permitted within each grade only as an allowance for variable efficiency and

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interpretation of graders, normal changes under favorable conditions during reasonable periods between grading, and reasonable variation of graders' interpretation.

009.04. Substitution of higher qualities for the lower qualities specified is permitted.

009.05. "No grade" means eggs of possible edible quality that fail to meet the requirements of an official U.S. Grade or that have been contaminated by smoke, chemicals, or other foreign material which has seriously affected the character, appearance, or flavor of the eggs.

010 Consumer Grades.

010.01 U.S. Grade AA.

010.01A U.S. Consumer Grade AA (at origin): U.S. Consumer Grade AA (at origin) shall consist of eggs which are at least 87 percent AA quality. The maximum tolerance of 13 percent which may be below AA Quality may consist of A or B quality in any combination, except that within the tolerance for B quality not more than 1 percent may be B quality due to air cells over $\frac{3}{8}$ inch, blood spots (aggregating not more than $\frac{1}{8}$ inch in diameter), or serious yolk defects. Not more than 5 percent (7 percent for Jumbo size) Checks are permitted and not more than 0.50 percent Leakers, Dirties, or Loss (due to meat or blood spots) in any combination, except that such Loss may not exceed 0.30 percent. Other types of Loss are not permitted.

010.01B U.S. Consumer Grade AA (Destination). U.S. Consumer Grade AA (destination) shall consist of eggs which are at least 72 percent AA quality. The remaining tolerance of 28 percent shall consist of at least 10 percent A quality, and the remainder shall be B quality, except that within the tolerance for B quality not more than 1 percent may be B quality due to air cells over $\frac{3}{8}$ inch, blood spots (aggregating not more than $\frac{1}{8}$ inch in diameter), or serious yolk defects. Not more than 7 percent (9 percent for Jumbo size) Checks are permitted and not more than 1 percent Leakers, Dirties, or Loss (due

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to meat or blood spots) in any combination, except that such Loss may not exceed 0.30 percent. Other types of Loss are not permitted.

010.02 U.S. Grade A.

010.02A U.S. Consumer Grade A (at origin). U.S. Consumer Grade A (at origin) shall consist of eggs which are at least 87 percent A quality or better. Within the maximum tolerance of 13 percent which may be below A quality, not more than 1 percent may be B quality due to air cells over 3/8 inch, blood spots (aggregating not more than 1/8 inch in diameter), or serious yolk defects. Not more than 5 percent (7 percent for Jumbo size) Checks are permitted and not more than 0.50 percent Leakers, Dirties, or Loss (due to meat or blood spots) in any combination, except that such Loss may not exceed 0.30 percent. Other types of Loss are not permitted.

010.02B U.S. Consumer Grade A (Destination). U.S. Consumer Grade A (destination) shall consist of eggs which are at least 82 percent A quality or better. Within the maximum tolerance of 18 percent which may be below A quality, not more than 1 percent may be B quality due to air cells over 3/8 inch, blood spots (aggregating not more than 1/8 inch in diameter), or serious yolk defects. Not more than 7 percent (9 percent for Jumbo size) Checks are permitted and not more than 1 percent Leakers, Dirties, or Loss (due to meat or blood spots) in any combination, except that such Loss may not exceed 0.30 percent. Other types of Loss are not permitted.

010.03 U.S. Grade B.

010.03A U.S. Consumer Grade B (at origin). U.S. Consumer Grade B (at origin) shall consist of eggs which are at least 90 percent B quality or better, not more than 10 percent may be Checks and not more than 0.50 percent Leakers, Dirties, or Loss (due to meat or blood spots) in any combination, except that such Loss may not exceed 0.30 percent. Other types of Loss are not permitted.

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010.03B U.S. Consumer Grade B (destination). U.S. Consumer Grade B (destination) shall consist of eggs which are at least 90 percent B quality or better, not more than 10 percent may be Checks and not more than 1 percent Leakers, Dirties, or Loss (due to meat or blood spots) in any combination, except that such Loss may not exceed 0.30 percent. Other types of Loss are not permitted.

010.04 Additional Tolerances.

010.04A In Lots of Two Or More Cases.

010.04A1. For Grade AA - No individual case may exceed 10 percent less AA quality eggs than the minimum permitted for the lot average.

010.04A2. For Grade A - No individual case may exceed 10 percent less A quality eggs than the minimum permitted for the lot average.

010.04A3. For Grade B - No individual case may exceed 10 percent less B quality eggs than the minimum permitted for the lot average.

010.04B. For Grades AA, A, and B, no lot shall be rejected or down-graded due to the quality of a single egg except for Loss other than blood or meat spots.

010.05 Summary of Consumer Grades.

010.05A Lots of Two Or More Cases.

U.S. consumer grade (origin)	Quality Required	<u>Tolerance Permitted²</u>	
		Percent	Quality
Grade AA	87 percent AA.	Up to 13 ... A or B. ⁵ Not over 5 Checks ⁶	
Grade A	87 percent A or better	Up to 13 ... B. ⁵ Not over 5 Checks ⁶	

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Grade B	90 percent B or better	Not over 10 Checks
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U.S. consumer grade (Destination)	Quality required	<u>Tolerance permitted</u> ³ Percent Quality
Grade AA	72 percent AA.	Up to 28 ⁴ .. A or B. ⁵ Not over 7 Checks ⁶
Grade A	82 percent A or better	Up to 18 ... B. ⁵ Not over 7 Checks ⁶
Grade B	90 percent B or better	Not over 10 Checks

² For the U.S. Consumer grades (at origin), a tolerance of 0.50 percent Leakers, Dirties, or Loss (due to meat or blood spots) in any combination is permitted except that such loss may not exceed 0.30 percent. Other types of Loss are not permitted.

³ For the U.S. Consumer grades (destination), a tolerance of 1 percent Leakers, Dirties, or Loss (due to meat or blood spots) in any combination is permitted, except that such Loss may not exceed 0.30 percent. Other types of Loss are not permitted.

⁴ For U.S. Grade AA at destination, at least 10 percent must be A quality or better.

⁵ For U.S. Grade AA and A at origin and destination within the tolerances permitted for B quality, not more than 1 percent may be B quality due to air cells over 3/8 inch, blood spots (aggregating not more than 1/8 inch in diameter), or serious yolk defects.

⁶ For U.S. Grades AA and A Jumbo size eggs, the tolerance for Checks at origin and destination is 7 percent and 9 percent, respectively.

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010.05B Individual Case Within A Lot.

U.S. consumer grade	Case quality	Origin (percent)	Destination (percent)
Grade AA	AA (min)	77	62
	A or B	13	28
	Check (max)	10	10
Grade A	A (min)	77	72
	B	13	18
	Check (max)	10	10
Grade B	B (min)	80	80
	Check (max)	20	20

011 Weight Classes.

011.01 Weight Classes For Consumer Grades For Shell Eggs. The weight classes for U.S. Consumer Grades for shell eggs shall be as indicated below, and shall apply to all consumer grades.

Size or weight class	Minimum net weight per dozen	Minimum net weight per 30 dozen	Minimum weight for individual eggs at rate per dozen
	Ounces	Pounds	Ounces
Jumbo	30	56	29
Extra Large	27	50½	26
Large	24	45	23
Medium	21	39½	20
Small	18	34	17
Peewee	15	28	--

011.02. A lot average tolerance of 3.3 percent for individual eggs in the next lower weight class is permitted as long as no individual case within the lot exceeds 5 percent.

012 Wholesale Grades.

012.01. "U.S. Specials - % AA Quality" shall consist of eggs of which at least 20 percent are AA quality; and the actual percentage of AA quality eggs shall be stated in the grade name. Within the maximum of 80 percent which

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may be below AA quality, not more than 7.5 percent may be B quality, Dirties, or Checks in any combination and not more than 2.0 percent may be Loss.

012.02. "U.S. Extras - % A Quality" shall consist of eggs of which at least 20 percent are A quality; and the actual total percentage of A quality and better shall be stated in the grade name. Within the maximum of 80 percent which may be below A quality, not more than 11.7 percent may be Dirties or Checks in any combination and not more than 3.0 percent may be loss.

012.03. "U.S. Standards - % B Quality" shall consist of eggs of which at least 84.3 percent are B Quality; and the actual total percentage of B quality and better shall be stated in the grade name. Within the maximum of 15.7 percent which may be below B quality, not more than 11.7 percent may be Dirties or Checks in any combination and not more than 4.0 percent may be loss.

012.04. Summary Of Wholesale Grades.

Wholesale grade designation	Minimum percentage of eggs of specific qualities required ¹			Maximum tolerance permitted (lot average)		
	AA quality	A quality or better	B quality or better	B quality dirties and checks (percent)	Dirties and checks (percent)	Loss (percent)
U.S. specials - percent AA quality ²	20	(³)	(⁴)	7.5		2
U.S. extras - percent A quality ²		20	(³)		11.7	3
U.S. standards - percent B quality ²			84.3		11.7	4

¹ Substitution of eggs possessing higher qualities for those possessing lower specified qualities is permitted.

² The actual total percentage must be stated in the grade name.

³ Balance.

⁴ None except for tolerance.

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013 Weight Classes.

013.01 Weight Classes For Wholesale Grades. The weight classes for U.S. Wholesale Grades for shell eggs shall be as indicated.

Weight Classes	Per 30 dozen eggs	Weights for individual eggs at rate per dozen		
	Average net weight on a lot ¹ bases	Minimum net weight individual case ² bases	Minimum weight	Weight variation tolerance for not more than 10 percent, by count, of individual eggs
Extra large	At least - 50½ pounds	50 pounds	26 ounces	Under 26 but not under 24 ounces.
Large	45 pounds	44 pounds	23 ounces	Under 23 but not under 21 ounces.
Medium	39½ pounds	39 pounds	20 ounces	Under 20 but not under 18 ounces.
Small	34 pounds	None	None	None.

¹ Lot means any quantity of 30 dozen or more eggs.

² Case means standard 30 dozen egg case as used in commercial practice in the United States.

014. Nest-Run Grade. "U.S. Nest Run - % AA Quality" shall consist of eggs of current production of which at least 20 percent are AA quality; and the actual percentage of AA quality eggs shall be stated in the grade name. Within the maximum of 15 percent which may be below A quality, not more than 10 percent may be B quality for shell shape, interior quality (including meat or blood spots), or due to rusty or blackish-appearing cage marks or blood stains, not more than 5 percent may have adhering dirt or foreign material on the shell 1/2 inch or larger in diameter, not more than 6 percent may be Checks, and not more than 3 percent may be Loss. Marks which are slightly gray in appearance and adhering dirt or foreign material on the shell less than 1/2 inch in diameter are not considered quality factors. The eggs shall be officially graded for all other quality factors. No case may contain less than 75 percent A quality and AA quality eggs in any combination.

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014.01 Summary of Nest-Run Grade.

Nest-run grade, description ²	Minimum percentage of quality required (lot average) ¹		Maximum percentage tolerance permitted (15 percent lot average) ¹			
	AA quality ³	A quality or better ⁴	B quality for shell shape, interior quality (including blood and meat spots), or cage marks ⁵ and blood stains	Checks	Loss	Adhering dirt or foreign material ½ inch or larger in diameter
U.S. nest-run- percent AA quality ⁶	20	85	10	6	3	5

¹ Substitution of eggs of higher qualities for lower specified qualities is permitted.

² Stains (other than rusty or blackish appearing cage marks or blood stains), and adhering dirt and foreign material on the shell less than ½ inch in diameter shall not be considered as quality factors in determining the grade designation.

³ No case may contain less than 10 percent AA quality.

⁴ No case may contain less than 75 percent A quality and AA quality eggs in any combination.

⁵ Cage marks which are rusty or blackish in appearance shall be considered as quality factors. Marks which are slightly gray in appearance are not considered as quality factors.

⁶ The actual total percentage must be stated in the grade name.

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015 Weight Classes. The weight for the U.S. nest-run grade for shell eggs shall be as indicated below and shall apply to Nest-Run Grade.

	Minimum average net weight on lot basis 30-dozen cases (Pounds)
Weight classes	
Class XL	51
Class 1	48
Class 2	45
Class 3	42
Class 4	39
No individual sample case may vary more than 2 pounds (plus or minus) from the lot average.	

016 Annotation. Neb. Rev. Stat. §§ 2 - 3501 et seq.